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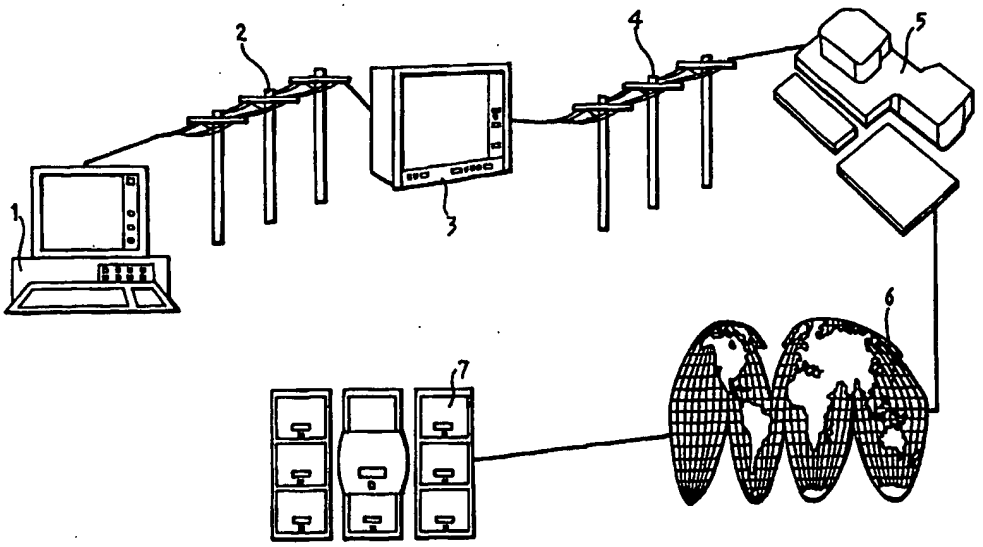

(57) Abstract

When the user (1) of a communication network (7) has identified a product or service of interest, he issues an order for the supply of the product/service by inputting into the network his particulars, including a respective code identifying his connection to the network manager (3). The sales manager (7) sends a request to the network manager (3) to check that the identification actually corresponds to the user (1) who issued the order. Upon confirmation of the matching of the code, the sales manager (7) puts the supply of the product/service into effect by transmitting an indication relating to the corresponding amount to the network manager (3) who charges the user (1) by the normal means used for charging connection to the network (6) and hence typically by charging by means of a bill.

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A system for controlling transactions on communication networks

The present invention addresses the problem of controlling transactions on communication networks such as - for example - the internet.

A network such as the internet is a large world communication network spread widely over the entire planet and interconnects computer networks owned by public bodies, companies and private individuals. It is thus an integrated structure, the users of which can theoretically be divided into two categories: suppliers of information who use computers connected to the network for publicizing information or selling products and/or services and users who use computers to access information available on the network in order to purchase the products or services offered or simply to communicate with one another.

In fact, the internet currently already offers very varied services mainly connected with commercial and cultural information and entertainment (and the situation is destined to develop further in this direction); it is also possible to examine products for sale and to purchase them. In almost all cases, conventional means are used for payment (for example: cash on delivery, credit transfers or bank payments, charging of accounts held with the vendor by the purchaser of the goods or service, credit cards, etc.).

All of these solutions suffer to a greater or lesser extent from problems arising from the possible slowness of the service and from safety aspects which in turn can give rise to further delays. In particular, for the person offering the product or the service, there is the problem of checking that the purchaser is making or has made the payment and/or

that the purchaser is in fact a person interested in the purchase and not a person committing an illegal act and/or a nuisance. Conversely, the purchaser or potential purchaser may have reasons for being unwilling to input "sensitive" data such as, for example, a credit-card number, into the network since he is aware - particularly as a result of warnings which appear repeatedly on the network - that the network cannot ensure conditions of absolute discretion in relation to such data.

Moreover, there is the problem that all of the forms of payment described above presuppose the need for access to and/or availability of specific instruments of payment which may differ from one country to another. Although they are normally available to a commercial user, these instruments may not be available to a private person who purchases certain goods and services occasionally, generally for a small sum, (a so-called "minipayment"). Since it is inconceivable that such a user would provide himself with what is required specifically to effect irregular payments of small amounts, the consequence is very clearly that the person usually gives up the possible purchase.

The object of the present invention, which has the characteristics claimed in the following claims, is to provide a radical solution to the problems mentioned above.

Its implementation is based essentially on the recognition of the fact that any user connected to a communication network such as the internet is connected by means of a telephone terminal and hence by means of a subscriber point intrinsically arranged for counting and charging calls made.

Another aspect of the solution according to the invention makes use of the presence on the network of so-called "sales

managers" which are associated with banks, and which constitute respective internet sites to which suppliers and vendors are connected so that it is possible to input into the network the codes of the various products/services offered, electronic forms describing the characteristics and the price, as well as the actual product, if it is a product which can be sold by means of the internet.

According to the currently-preferred embodiment of the invention, the customer selects the product and orders it by introducing himself by means of his normal P.I.N., the manager sends him the product/service directly, if it can be delivered by means of the internet, or passes the order to the vendor who provides for delivery. The cost is automatically charged on the bill on which calls are charged, without the need to establish contracts beforehand, for example, with a banking institution, etc.

The solution according to the invention permits checking in real time of an unambiguous and unmistakable match between the data by which the caller introduces himself to the virtual store and the number or code of the line connecting him to the internet. From this point of view, the preferred solution is that of the transmission of an element identifying the caller (for example, the telephone number of the telephone connection) to the recipient of the call.

The invention will now be described, purely by way of non-limiting example, with reference to the appended drawings, in which:

Figure 1 shows schematically a possible configuration of the system according to the invention,

Figure 2 shows schematically the possible arrangement of the respective service, in the form of a block diagram, and

Figures 3 to 13 show successive possible stages of the man-machine dialogue characteristic of the system according to the invention.

Figure 1 shows a typical configuration of the connection of a terminal 1 to a communication network 6. Specifically, the terminal 1 (which will be assumed below to be used by the user of the system according to the invention, or purchaser) is connected to a so-called service provider 5 by means of a system of lines 2, 4 controlled by a body (a telephone company or the like) acting as a line manager 3 and as a user-checking body. The provider connects the user 1, by means of the internet network 6 or an equivalent communication network, to a so-called virtual store 7, constituted by another terminal or group of terminals which is connected to the network 6 and which offers certain goods or services to the user/purchaser 1 by presenting them on a respective site or group of sites.

The above-described method of connection may be considered widely known in the art and does not therefore require further description herein.

Briefly, the system according to the invention is used on the basis of the following methods.

The user 1 is connected to the network 6 by means of his manager 3 and the respective lines 2, 4 as well as his provider 5. By navigating on the network, he discovers the site or set of sites connected to the vendor 7 and, after viewing the various electronic pages of the site or sites in

question, decides to purchase a certain product/service which interests him.

He then goes on to fill in the purchase form (shown in Figure 6) by inserting his particulars, including the code of his line or telephone number (or equivalent identification).

At this point, upon receipt of the respective message, the sales manager 7 sends a request to the line manager 3 to check that the identification supplied actually corresponds to the code or telephone number of the user 1 connected to the site.

Upon receipt of this information (which can be regarded essentially as a consent datum for the transaction), the vendor 7 compares it with that input by the user 1 and, if it corresponds (positive consent datum) implements or puts into effect the procedure relating to the supply of the product/service purchased. If it does not correspond (negative consent datum) a data-inconsistency message is sent to the user 1, usually accompanied by an invitation to repeat the purchasing formalities, a final refusal being implemented only when the inconsistency condition - which condition puts in doubt the actual identity/legitimacy of the person introducing himself as the purchaser - has been confirmed one or more times. Naturally, in these conditions, the user 1 can choose to disconnect himself from the site or to re-key the correct code which will permit transmission of the material.

However, it is clear that at least some of the aforementioned comparison and transaction-consent operations, etc., may also be entrusted to the manager 3 so that a single body may combine the functions of the entities indicated 3 and 5 or 3, 5 and 7 herein.

Upon completion of the connection with the user 1, the sales manager 7 transmits to the line manager 3 the data relating to the user for charging on the bill.

As well as being very convenient for the purchaser, the system according to the invention thus offers better safety margins than, for example, a purchase made with a credit card. This is because the purchase and the charging take place only after the user's line has actually been checked in real time and without the transmission of codes or credit-card numbers which could be used fraudulently or detected in unauthorized manner by third parties.

The diagram of Figure 2 is a general view of the main functions necessary for the full and preferred implementation of the system according to the invention. This implementation is carried out in an internet context in accordance with known criteria which do not need to be described in detail herein.

In general, the system is configured with a manager unit 10 (which is usually resident with the so-called vendor 7 but may also be located with the network manager 3) for developing and supplying to the user 1 a set of information consisting essentially of the following components:

- general information 11,
- information relating to the service performed 12,
- index of the families of products/services 13,
- method of filling in the purchase form 14,
- information for the user 15,
- exit function possibly with suggestions and complaints function 16.

The families index 13 is then divided into sub-functions such as a view 17 of the products/information relating to the services supplied of the family selected, with further functions, for example, a function 18 for looking up and displaying the product.

In addition to the on-line user-checking function 22 (in accordance with the criteria described above), the function 14 for filling in the purchase form also provides, in general, for a recapitulation and confirmation function 19, a function 20 for transmitting the charging details to the manager 3, as well as for functions 21 for taking the necessary action for the supply of the product/service to the customer.

Figures 3 to 13 show some of the functions in question in the form of possible exemplary "displays" which may appear on the user interface.

More specifically, these are the following functions:

- general information 11 (Figure 3),
- information on the service performed 12 (Figure 4),
- index of the families of products 13 (Figure 5),
- filling-in of the purchase form 14 (Figure 6),
- information for the user 15 (Figure 7),
- exit 16 (Figure 8)
- view of products of the family selected 17 (Figure 9),
- product information 18 (Figure 10),
- recapitulation for confirmation 19 (Figure 11),
- transmission of data to line manager 20 (Figure 12), and
- on-line user check 22 (Figure 13).

Naturally, the principle of the invention remaining the same, the details and forms of embodiment may be varied widely with respect to those described and illustrated, without thereby departing from the scope of the invention.

CLAIMS

1. A system for controlling transactions on a communication network (6) with a plurality of users (1, 7) connected to the network (6) by means of at least one respective network manager (3), characterized in that it comprises:

- user interface means (1) for enabling at least one of the plurality of users who may act as a user purchasing products and/or services to input into the network (6) at least one respective identification characteristic of the connection of the purchasing user (1) to the network (7) by means of the network manager (3),

- further user interface means (7) which can enable at least one other of the plurality of users to take on the role of a supplier of the products and/or services,

- checking means (3, 7) for identifying the respective identification and for checking that it corresponds to a reference identification unambiguously characteristic of the connection of the purchasing user (1) to the respective network manager (3) in order to generate a corresponding datum of consent to the transaction in dependence on the match between the respective identification input by the purchasing user (1) at the time in question and the reference identification, and to put into effect the supply of the products and/or services to the purchasing user.

2. A system according to Claim 1, characterized in that, as a result of the generation of the datum of consent to the transaction, the further user-interface means (7) send to the respective network manager (3) a respective charge datum corresponding to the products and/or services supplied, and in that the network manager (3) charges a sum corresponding

to the charge datum to the purchasing user (1) in a manner co-ordinated with the charging of the connection of the purchasing user (1) to the network manager (3).

3. A system according to Claim 2, characterized in that the charging takes place by means of a bill.

4. A system according to any one of Claims 1 to 3, characterized in that the further user interface means are configured for:

- detecting the input of the identification input by the purchasing user (1) at the time in question, and

- transmitting to the network manager (3) a request for the issue of the datum of consent to the transaction.

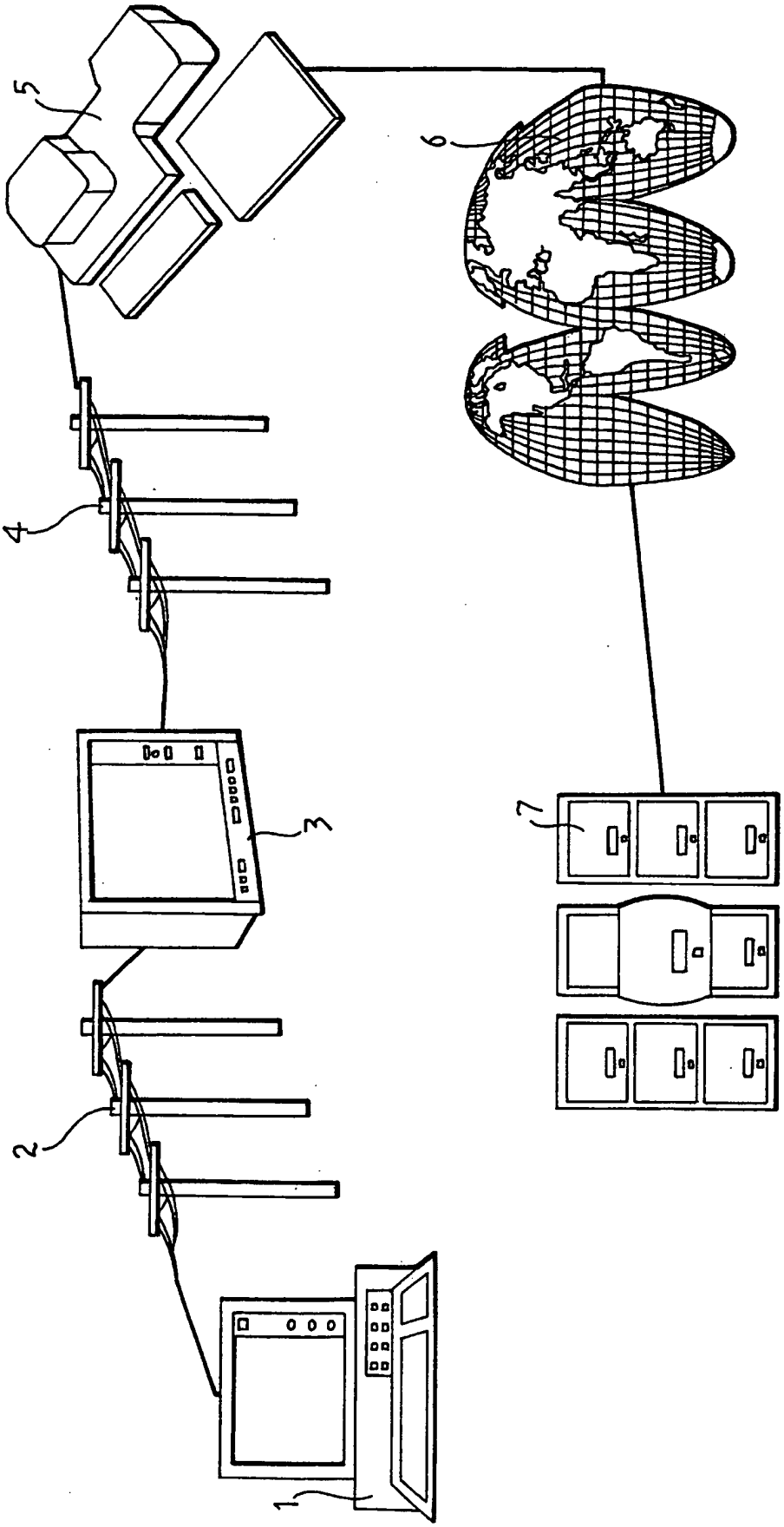

FIG. 1

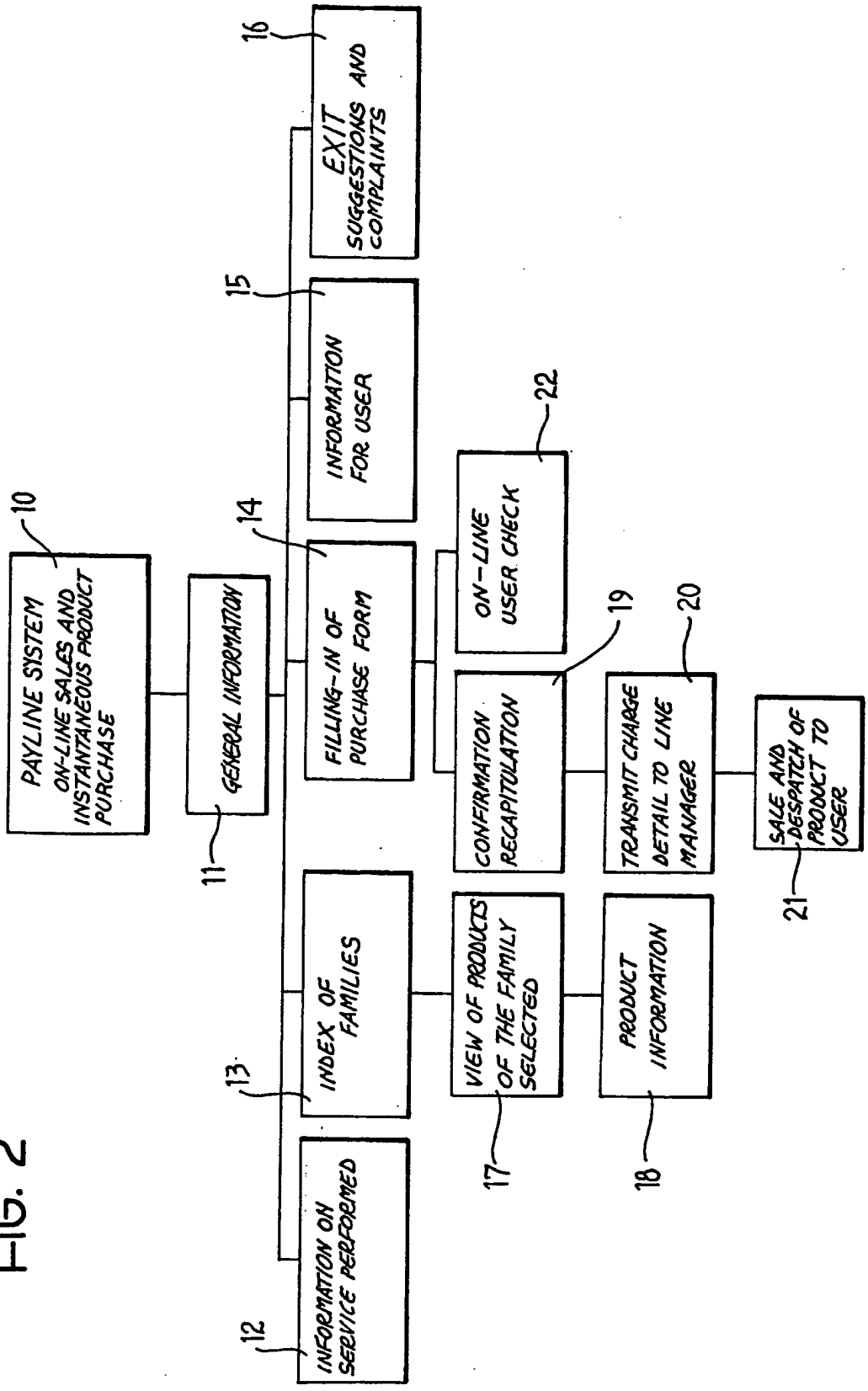
PAYLINE SYSTEM ON-LINE SALES AND INSTANTANEOUS PRODUCT PURCHASE
10
GENERAL INFORMATION
11
INDEX OF FAMILIES
13
INFORMATION ON SERVICE PERFORMED
12
FILLING-IN OF PURCHASE FORM
14
VIEW OF PRODUCTS OF THE FAMILY SELECTED
17
PRODUCT INFORMATION
18
INFORMATION FOR USER
15
EXIT SUGGESTIONS AND COMPLAINTS
16
ON-LINE USER CHECK
22
CONFIRMATION RECAPITULATION
19
TRANSMIT CHARGE DETAIL TO LINE MANAGER
20
SALE AND DESPATCH OF PRODUCT TO USER
21

FIG. 2

FIG. 3

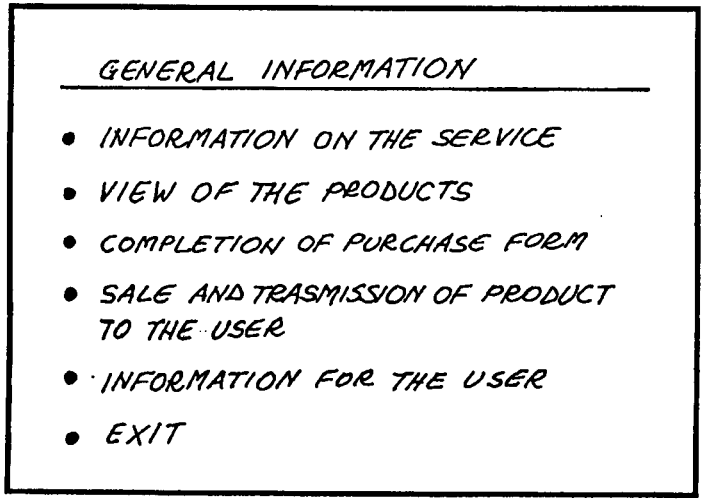

FIG. 4

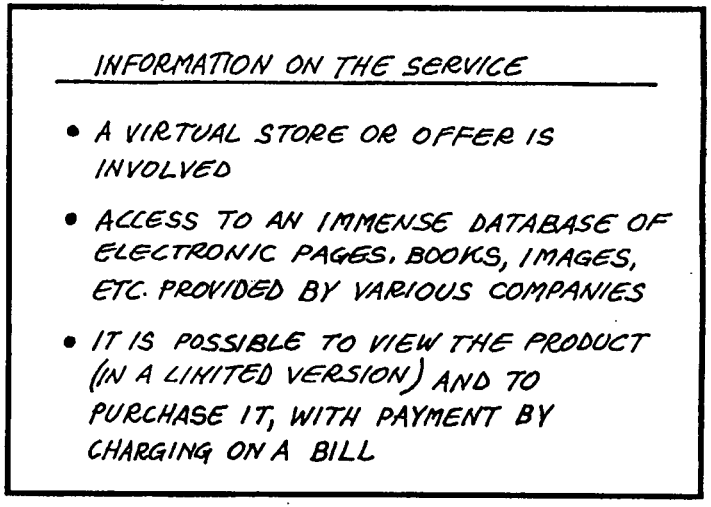

FIG. 5

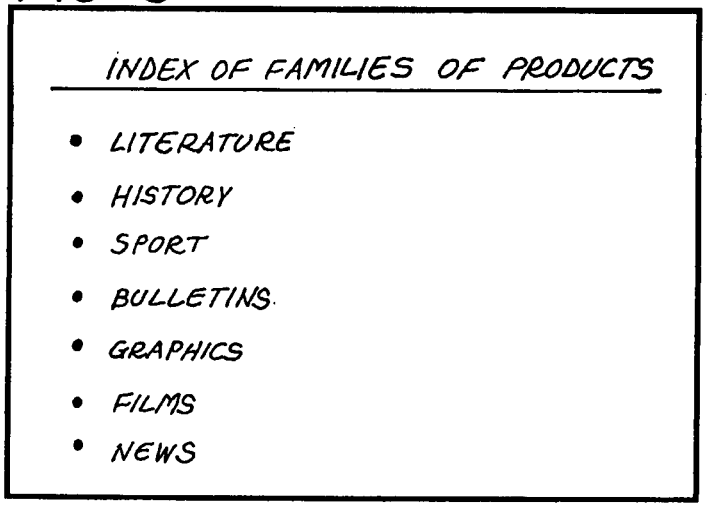

FIG. 6

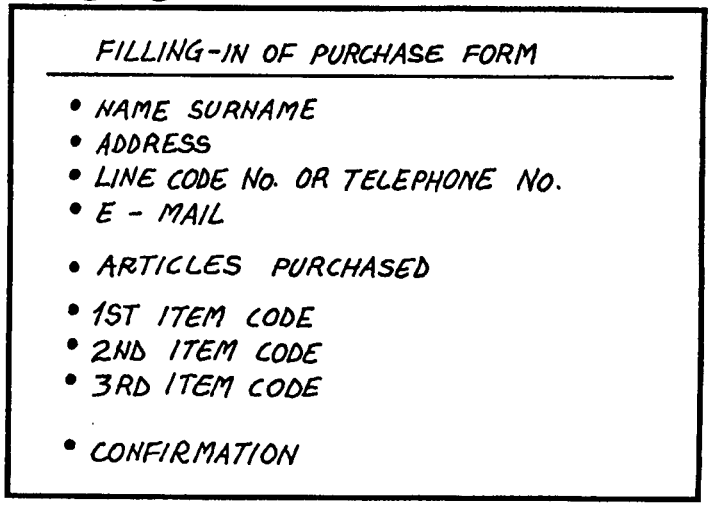

FIG. 7

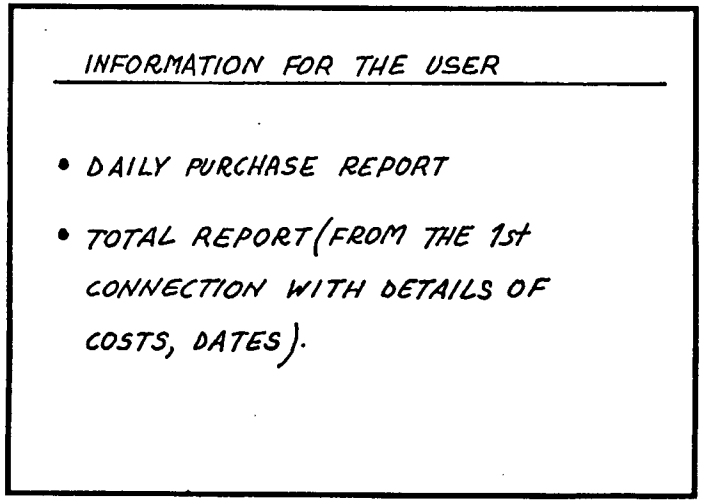

FIG. 8

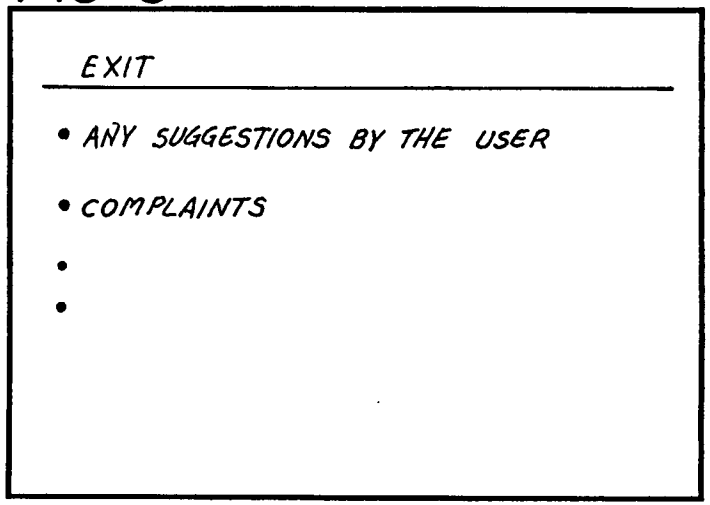

FIG. 9

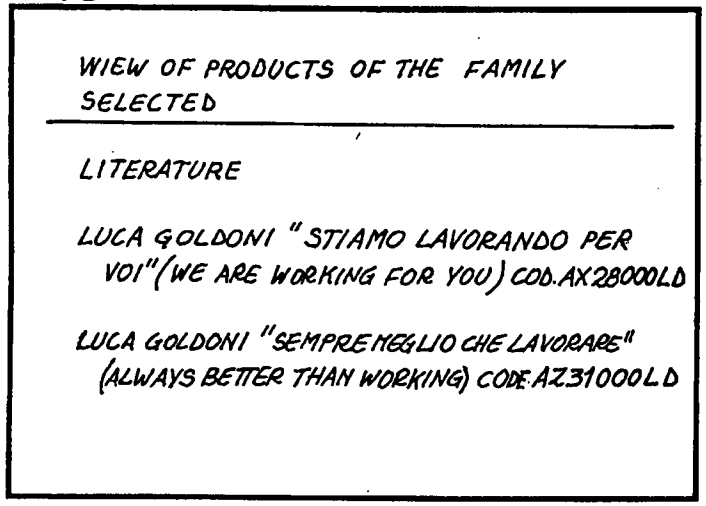

FIG. 10

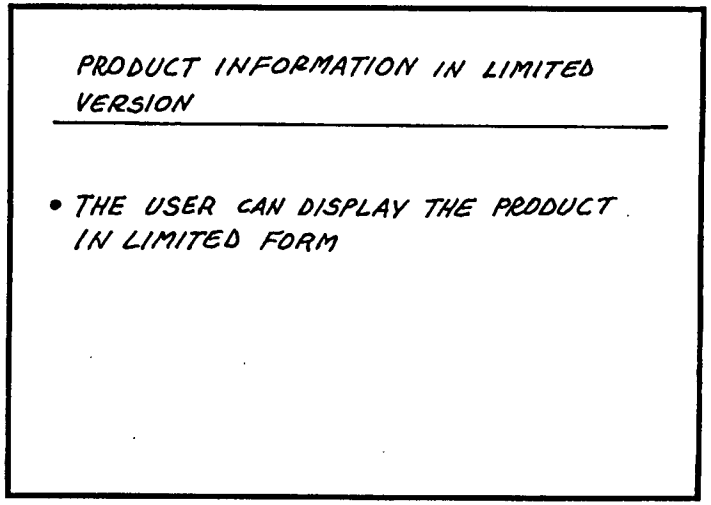

FIG. 11

RECAPITULATION FOR CONFIRMATION

- NAME SURNAME FULVIO DAMBROSI
- ADDRESS VIA CREA 10 TURIN
- TELEPHONE 011/679246
- E-MAIL FULVIO@csg.it
- ITEM AX28000LD LUCA GOLDONI "STIAMO LAVORANDO PER VOI" (WE ARE WORKING FOR YOU)
- PRICE LIRE 28,000
- CONFIRMATION FOR ACCEPTANCE OF ORDER

FIG. 12

TRASMISSION OF DATA TO LINE MANAGER

- BEFORE SENDING THE MATERIAL PURCHASED TO USER, THE PROGRAMME WILL HAVE TO SEND TO THE MANAGER OF THE TELEPHONE LINES A PACKET OF DATA, IN WHICH HE WILL HAVE TO SPECIFY:
- USER'S NAME
- USER'S TELEPHONE No. OR CODE No.
- CODE OF MATERIAL PURCHASED
- AMOUNT TO BE CHARGED TO THE USER

FIG. 13

ON-LINE USER CHECK

- THE VENDOR ASKS THE LINE MANAGER FOR THE CODE OR TELEPHONE NUMBER OF THE USER ON LINE
- IF THE NUMBER CORRESPONDS TO THAT IMPUT BY THE USER THE VENDOR PROCEEDS WITH THE SALE
- IF IT DOES NOT CORRESPOND, HE INDICATES TO THE USER THE INCONSISTENCY WHICH DOES NOT PERMIT THE SALE TO PROCEED